**Fractional Distillation**

**1.** Crude oil undergoes fractional distillation in tall towers. The different fractions produced have many uses.

(a) Name TWO of the fractions obtained from a fractional distillation tower, and describe ONE use for each.

(b) (i) Why does crude oil need to undergo fractional distillation before it can be used?

(ii) Explain why fractional distillation is carried out in tall towers.

In your answer you should link the process of fractional distillation to the physical properties and chemical structure of the hydrocarbons in crude oil.

**2.** Give a detailed account of **the process by which crude oil is seperated into useful products** In your answer, you should:

• explain why **this process** is necessary

• elaborate on what occurs during **this process**, and link this to the structure and properties of the hydrocarbons in crude oil.

• name two products, other than dodecane, C12H26 that are formed.

**3.** Crude oil is fractionally distilled in tall towers to obtain useful products.

**(a)** Explain why crude oil must be fractionally distilled before it can be used.

**(b)** Name TWO of the fractions obtained from the fractional distillation tower, and describe ONE use for each.

**(c)** Explain why fractional distillation is carried out in towers.

You will need to refer to the chemical structure and physical properties of the hydrocarbons that make up crude oil, and the way the fractional distillation tower operates.

**4.** Give a detailed account of the fractional distillation of crude oil. In your answer you should:

• describe the composition of crude oil

• explain how the process of fractional distillation is carried out

• link the process of fractional distillation to the physical **properties** and chemical **structure** of hydrocarbons.

**5.**

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| **Fraction Thing** | The diagram below illustrates the process of the fractional distillation of crude oil.  Discuss the fractional distillation of crude oil. In your answer, you should:  • describe the composition of crude oil  • explain how the physical properties of hydrocarbons allow them to be separated by fractional distillation  • fully explain how these physical properties are related to the chemical structure of hydrocarbons. |

**6.**  Discuss how crude oil can be separated into its components using fractional distillation. In your answer, outline what crude oil is and refer to the physical properties of hydrocarbons.

**7.**

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|  | Use the physical properties of hydrocarbons to **explain** how crude oil can be separated into its components using the process of fractional distillation. You may label the diagram below and refer to it in your explanation. |

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